

Political Loyalty and Leader Health

Bruce Bueno de Mesquita¹ and Alastair Smith²

Wilf Family Department of Politics

New York University

19 West 4th St, New York NY 10012

¹Bruce.buenodemesquita@nyu.edu, 212 998-3521

²Alastair.smith@nyu.edu, 212 992-9678

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Abstract

Using a new dataset on leader health, we present and test five hypotheses derived from a selectorate theory account of how chronic illness interacts with political institutions, especially winning coalition size, to help shape the probability and timing of regular and irregular leader depositions. The analysis shows that, especially in small coalition – autocratic – political systems, the expectation that an incumbent will die soon, and so not be able to deliver future private rewards to her coalition of supporters, greatly increases the likelihood that the leader will be overthrown. The study also compares selectorate expectations to an alternative view, that sickly leaders are deposed because they can no longer produce effective policy, measured in terms of economic growth. As predicted by selectorate theory, sickly leaders significantly improve growth in an effort to stay in power for their short remaining lifetime. The analysis offers a new view on an important aspect of political instability, namely leader removal.

1 Supplementary Material

In this supplementary appendix we present additional tables of hazard analyses. Table A1 uses the broader health measure Ill Health rather than the more conservative definition of Chronic condition in the main text. The indicator variable Ill Health is coded one for chronic conditions or when a leader is older than average life expectancy (Relative Age > 0) and dies of either Heart Attack, Stroke or Natural Causes. The findings are similar to those reported in the main text. Leaders close to death are more likely to be removed politically and the impact of approaching death is larger for those leaders coded as being in Ill Health than those who are coded otherwise.

Table A2 uses Polity's measure of Democracy minus Autocracy (rescaled between 0 and 1) instead of W . The impact of Polity is very similar to that of W . This result should not be surprising since they contain many of the same components. The principal component of the Polity measure that is excluded from the measurement of W is $xconst$, executive constraints. Following Morrow et al. (2008), the analyses in table A3 include the $xconst$ variable. It should be noted that while $xconst$ and W are conceptually different variables, within our sample their correlation is 0.85. Within the $\ln(p)$ equation, as with increases in W , additional executive constraints increase the ancillary parameter p . The substantive impact of W and $xconst$ together is that large coalition leaders with large executive constraints face a relatively constant hazard rate. Within the $X\beta$ part of the estimation, additional executive constraints increase the hazard leaders face.

Table A4 excludes leaders who are term limited. We use data from Carter and Nordstrom (2017) (which is based on Baturo (2014)). These data cover the years 1960-2001. In systems with term limits, observations for leaders in their final term are excluded. The results are similar to those reported in the main text.

Table A5 models the ancillary parameter $\ln(p)$ as a function of both winning coalition and selectorate size. The ancillary parameter is increasing in W and decreasing in S . Finally, Table ?? presents Cox Proportionate Hazard models. The second column in the table presents tests of the proportionate hazard assumption based on Schoenfeld residuals (Box-Steffensmeier and Jones, 2004). As anticipated by the theory, the institutional variables violate the proportionate hazard assumption. This violation justifies our use of the Weibull model. Models Cox 2 and Cox 3 interact the institutional variables with time to correct for the non-proportionality. The estimates find a similar impact of illness as reported in the Weibull models.

Table A1: Determinants of Domestic Deposition (Weibull Model, Ill Health)

	M1	M2	M3
	b/se	b/se	b/se
$X\beta$			
W	-0.223 (0.190)	-0.399 (0.214)	-0.526* (0.226)
S	-0.677*** (0.120)	-0.496*** (0.136)	-0.719*** (0.120)
CloseToDeath: IllHeath	1.231*** (0.258)	1.359*** (0.292)	1.459* (0.601)
CloseToDeath: Non-IllHeath	1.022** (0.331)	1.104** (0.404)	1.106 (0.567)
W * CloseToDeath: IllHeath			-0.395 (0.912)
W * CloseToDeath: Non-IllHeath			-0.109 (0.859)
Rel. Age	0.015*** (0.003)	0.012*** (0.003)	0.030*** (0.007)
W * Rel. Age			-0.025** (0.009)
Ln(GDPpc)	0.058* (0.023)	0.037 (0.025)	0.048* (0.023)
Ln(Pop)	0.032 (0.018)	0.035 (0.019)	0.031 (0.018)
Growth	-0.023*** (0.004)	-0.026*** (0.005)	-0.016* (0.008)
W * Growth			-0.015 (0.015)
Resource Rents		-0.016*** (0.004)	
Const.	-1.352*** (0.352)	-1.241** (0.382)	-1.014** (0.369)
Ln(p)			
W	0.658*** (0.075)	0.696*** (0.085)	0.719*** (0.079)
Const.	-0.669*** (0.055)	-0.666*** (0.064)	-0.710*** (0.058)
Observations	7955	6980	7955
Number of Leaders	1473	1293	1473
Failures	3 1220	1056	1220
LogLikelihood	-2287.243	-1920.380	-2282.449

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A2: Determinants of Domestic Deposition (Weibull Model, Polity Measure of Institutions)

	M1	M2	M3
	b/se	b/se	b/se
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$X\beta$			
Polity	-0.238 (0.157)	-0.204 (0.183)	-0.357 (0.200)
CloseToDeath: Chronic	1.368*** (0.302)	1.503*** (0.343)	1.605** (0.577)
CloseToDeath: Non-Chronic	1.091*** (0.309)	1.056** (0.396)	2.023*** (0.560)
Polity* CloseToDeath: Chronic			-0.397 (0.805)
Polity* CloseToDeath: Non-Chronic			-1.456 (0.844)
Rel. Age	0.012*** (0.003)	0.009** (0.003)	0.021** (0.007)
Polity * Rel. Age			-0.013 (0.009)
Ln(GDPpc)	0.001 (0.022)	-0.021 (0.024)	-0.004 (0.022)
Ln(Pop)	0.037* (0.019)	0.041* (0.020)	0.035 (0.019)
Growth	-0.031*** (0.005)	-0.034*** (0.005)	-0.021* (0.010)
Resource Rents		-0.010* (0.004)	
Polity * Growth			-0.018 (0.016)
Const.	-1.591*** (0.359)	-1.525*** (0.396)	-1.428*** (0.377)
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Ln(p)			
Polity	0.847*** (0.079)	0.872*** (0.089)	0.887*** (0.082)
Const.	-0.808*** (0.066)	-0.800*** (0.075)	-0.840*** (0.068)
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Observations	7761	6836	7761
Number of Leaders	1419	1254	1419
Failures	1146	1001	1146
LogLikelihood	4 -2113.825	-1783.530	-2110.114
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* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A3: Determinants of Domestic Deposition (Weibull Model, Addition of Executive Constraints from Polity Index)

	M1	M2	M3
	b/se	b/se	b/se
$X\beta$			
W	-0.901** (0.341)	-0.804* (0.385)	-1.435*** (0.372)
S	-1.024*** (0.142)	-0.856*** (0.161)	-1.091*** (0.142)
xconst	0.212*** (0.045)	0.172*** (0.051)	0.229*** (0.046)
CloseToDeath: Chronic	1.322*** (0.314)	1.451*** (0.359)	0.972 (0.914)
CloseToDeath: Non-Chronic	1.104*** (0.316)	1.045* (0.413)	1.759** (0.626)
W * CloseToDeath: Chronic			0.746 (2.977)
W * CloseToDeath: Non-Chronic			3.366 (1.783)
xconst* CloseToDeath: Chronic			-0.044 (0.356)
xconst* CloseToDeath: Non-Chronic			-0.635* (0.289)
Rel. Age	0.014*** (0.003)	0.011*** (0.003)	0.037*** (0.008)
W * Rel. Age			-0.034** (0.010)
Ln(GDPpc)	0.022 (0.024)	-0.002 (0.027)	0.012 (0.024)
Ln(Pop)	0.039* (0.019)	0.046* (0.021)	0.040* (0.019)
Growth	-0.028*** (0.005)	-0.031*** (0.006)	-0.020 (0.011)
W * Growth			-0.015 (0.018)
Resource Rents		-0.011* (0.005)	
Const.	-1.550*** (0.383)	-1.497*** (0.421)	-1.148** (0.403)
Ln(p)			
W	0.312* (0.155)	0.242 (0.171)	0.391* (0.158)
xconst	0.051* (0.021)	0.072** (0.024)	0.050* (0.021)
Const.	-0.653*** (0.069)	-0.694*** (0.081)	-0.702*** (0.071)
Observations	7323	6410	7323
Number of Leaders	1353	1187	1353
Failures	1079	934	1079
LogLikelihood	-1979.747	-1665.681	-1971.538

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A4: Determinants of Domestic Deposition (Excludes Term Limited Lame Ducks, 1960-2001)

	M1	M2	M3
	b/se	b/se	b/se
$X\beta$			
W	0.088 (0.239)	0.137 (0.283)	-0.190 (0.281)
S	-0.800*** (0.144)	-0.692*** (0.168)	-0.845*** (0.144)
CloseToDeath: Chronic	1.040** (0.364)	1.289** (0.402)	1.895* (0.744)
CloseToDeath: Non-Chronic	0.784* (0.363)	1.099* (0.432)	1.323* (0.544)
W * CloseToDeath: Chronic			-1.642 (1.330)
W * CloseToDeath: Non-Chronic			-0.950 (0.895)
Rel. Age	0.017*** (0.004)	0.013** (0.004)	0.034*** (0.007)
W * Rel. Age			-0.028* (0.011)
Ln(GDPpc)	0.050 (0.030)	0.011 (0.033)	0.035 (0.030)
Ln(Pop)	0.051* (0.022)	0.056* (0.025)	0.050* (0.023)
Growth	-0.021*** (0.006)	-0.026*** (0.006)	-0.020* (0.010)
W * Growth			-0.001 (0.018)
Resource Rents		-0.019*** (0.006)	
Const.	-1.666*** (0.456)	-1.551** (0.509)	-1.305** (0.469)
Ln(p)			
W	0.454*** (0.095)	0.483*** (0.111)	0.518*** (0.099)
Const.	-0.591*** (0.066)	-0.572*** (0.080)	-0.632*** (0.069)
Observations	5281	4358	5281
Number of Leaders	6	1074	1074
Failures	740	596	740
LogLikelihood	-1537.223	-1197.461	-1531.720

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A5: Determinants of Domestic Deposition (Weibull Model, W and S as Ancillary Parameters)

	M1	M2	M3
	b/se	b/se	b/se
$X\beta$			
W	-0.565** (0.199)	-0.758*** (0.221)	-0.852*** (0.232)
S	-0.232 (0.158)	0.048 (0.186)	-0.289 (0.158)
CloseToDeath: Chronic	1.317*** (0.270)	1.456*** (0.297)	1.347* (0.608)
CloseToDeath: Non-Chronic	0.981** (0.309)	0.985* (0.391)	1.103* (0.561)
W * CloseToDeath: Chronic			-0.106 (0.949)
W * CloseToDeath: Non-Chronic			-0.158 (0.818)
Rel. Age	0.015*** (0.003)	0.013*** (0.003)	0.030*** (0.007)
W * Rel. Age			-0.025** (0.009)
Ln(GDPpc)	0.052* (0.023)	0.031 (0.025)	0.042 (0.023)
Ln(Pop)	0.037* (0.018)	0.040* (0.019)	0.036* (0.018)
Growth	-0.023*** (0.004)	-0.026*** (0.005)	-0.018* (0.008)
W * Growth			-0.012 (0.014)
Resource Rents		-0.016*** (0.004)	
Const.	-1.507*** (0.355)	-1.483*** (0.390)	-1.176** (0.373)
Ln(p)			
W	0.888*** (0.092)	0.921*** (0.098)	0.936*** (0.094)
S	-0.342*** (0.078)	-0.397*** (0.087)	-0.334*** (0.078)
Const.	-0.535*** (0.060)	-0.472*** (0.072)	-0.574*** (0.062)
Observations	7955	6980	7955
Number of Leaders	1473	1293	1473
Failures	1220	1056	1220
LogLikelihood	-2277.885	-1910.676	-2273.665

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A6: Cox Proportionate Hazard Model The column labeled PH test reports the χ^2 statistic for test of the proportionate hazard assumption for model Cox 1. Models Cox 2 and Cox 3 include interactions between $\ln(t)$ and institutional variables.

	Cox 1 b/se	Test PH ρ/χ^2 b/se	Cox 2 b/se	Cox 3
W	0.654*** (0.156)	0.204*** 60.08	2.222*** (0.264)	-0.128 (0.293)
S	-0.780*** (0.117)	-0.153*** 31.31	-0.847*** (0.116)	2.493*** (0.298)
CloseToDeath: Chronic	1.345*** (0.279)	.012 .18	1.236*** (0.282)	1.206*** (0.291)
CloseToDeath: Non-Chronic	0.915** (0.310)	-.005 .03	0.787* (0.310)	0.803* (0.318)
Rel. Age	0.017*** (0.003)	.0037 1.64	0.018*** (0.003)	0.018*** (0.003)
Ln(GDPpc)	0.056* (0.022)	-.088** 8.37	0.040 (0.022)	0.043 (0.022)
Ln(Pop)	0.018 (0.018)	-.005 .03	0.011 (0.018)	0.026 (0.018)
Growth	-0.026*** (0.004)	-0.054* 4.49	-0.027*** (0.004)	-0.027*** (0.004)
WlnT			-1.031*** (0.138)	0.394* (0.170)
SlnT				-1.922*** (0.151)
Observations	7955		7955	7955
Number of Leaders	1473		1473	1473
Failures	1220		1220	1220
LogLikelihood	-7597.063		-7567.832	-7479.459

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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